

# HBCU Future Engineering Faculty Fellowship Program



## FINAL REPORT

(1-JAN-2001 – 31-DEC-2008)

To:

Dr. Anthony Junior, ONR Code 03R  
Program Manager, Education Programs  
Office of Naval Research  
875 North Randolph Street, Room OLC 1414  
Arlington, Virginia 22203-1995

From:

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March 31, 2009  
N00014-01-1-0987

**20090225129**

## REPORT DOCUMENTATION PAGE

Form Approved  
OMB No. 0704-0188

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1. REPORT DATE (DD-MM-YYYY) 03-31-09		2. REPORT TYPE Final Report 01-08		3. DATES COVERED (From - To) 01-01-01 to 12-31-08	
4. TITLE AND SUBTITLE ONR Future Engineering Faculty Fellowship Program				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER N00014-01-1-0987	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) DR. JOSEPH MONROE, PRINCIPAL INVESTIGATOR				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) North Carolina A&T State University 1601 East Market Street Greensboro, NC 27411				8. PERFORMING ORGANIZATION REPORT NUMBER 210013	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) OFFICE OF NAVAL RESEARCH 100 ALABAMA STREET, SW, SUITE 4R15 ATLANTA, GA 30303-3104				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT UNLIMITED					
13. SUPPLEMENTARY NOTES The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other documentation.					
14. ABSTRACT The Office of Navy Research (ONR) Historically Black Colleges and Universities (HBCU) Future Engineering Faculty Fellowship Program completed eighteen (18) years of service as of December 31, 2008. The program continues to represent a commitment by the Office of Naval Research to the Deans of Historically Black Engineering Colleges (HBCU) by providing monetary assistance to students in the pursuit of the Ph.D. degree in engineering who have certified their commitment to teach at a sponsoring HBEC. Most importantly, the program assists with the enhancement of the number of faculty at these institutions who hold the Ph.D. in Engineering, thus escalating the overall quality and excellent at these institutions. Over the past eighteen years, the ONR/HBCU Future Engineering Faculty Fellowship Program has served fifty (50) students at various accredited engineering colleges across sixteen (16) states.					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON Dr. Joseph Monroe, Principal Investigator
a. REPORT	b. ABSTRACT	c. THIS PAGE			19b. TELEPHONE NUMBER (Include area code) 336-334-7589

## **1.0 Introduction**

The Office of Naval Research (ONR) Historically Black Colleges and Universities (HBECC) Future Engineering Faculty Fellowship (FEFF) Program completed eighteen (18) years of service as of December 31, 2008. The program continues to represent a commitment by the Office of Naval Research to the Deans of Historically Black Engineering Colleges (HBEC) by providing monetary assistance to students in pursuit of the Ph.D. degree in engineering who have certified their commitment to teach at a sponsoring HBEC. Most importantly, the program assists with the increase of the number of faculty at these institutions who hold the Ph.D. in engineering, thus improving the overall quality and excellence at these institutions. Over the past eighteen years, the ONR/HBCU Future Engineering Faculty Fellowship Program has served fifty (50) students at various accredited engineering colleges across sixteen (16) states. Over the past year, the ONR/HBCU Future Engineering Faculty Fellowship Program has served nineteen (19) students at various accredited engineering colleges across nine (9) states. Additionally, it should be noted of the nineteen (19) students, seven (7) students thirty-six months eligibility expired and five (5) students have graduated and are searching for jobs at HBCUs. The program currently supports seven (7) doctoral fellows. Each fellow's funding may be renewed annually for up to three years. All fellows are required to commit to one summer internship at a Navy Research Laboratory.

## **2.0 Program Management**

Dr. Joseph Monroe, Principal Investigator and Lando Little, Jr. ONR Program Manager, at North Carolina A&T State University administer the ONR/HBEC Ph.D. Fellowship Program. The Fellowship Program will continue to be administered in conjunction with the Historically Black Engineering Colleges Committee and the American Society for Engineering Education (ASEE).

### **2.1 Promotional Materials and Awareness**

#### **Fellowship Application:**

A revised ONR application booklet has been completed. The booklet contains updated information on topics such as funding, contact information and the address of the ONR website and e-mail accounts. As new funding increases occur, the application will be revised and updated to reflect this information. (See EXHIBIT A)

#### **Brochure:**

A revised ONR Future Faculty Fellowship program brochure has been completed. The brochure contains updated information on topics such as student spotlights, eligibility, financial awards, sponsored HBECs and the selection criteria of the ONR program. As new funding increases occur, the brochure will be revised and updated to reflect additional information. (See EXHIBIT B)



### Website:

The Program Manager has designed a new look for the ONR Web Site. The site will display some of the recipients of the fellowship and their research. The Web Site will be used to promote and advertise the ONR Fellowship Program to prospective doctoral candidates. The Web Site will include information regarding funding guidelines, contact information and an application that can be downloaded for easy access. ONR's new Web Site Phase One has been completed and can be viewed at <http://yourbetterweb.com/onr> (See EXHIBIT C)

### ONR Flyer and Insert:

In addition to the promotional materials, the Program Manager increased the awareness of the ONR Fellowship Program by customizing inserts and flyers to be passed out to the public. The flyers and inserts consist of general information about the Fellowship Program and How to Apply. (See EXHIBIT D)

### E-mail:

In addition to the newly constructed ONR Web Site, the ONR Future Faculty Fellowship Program has its own e-mail account to provide feedback to questions or concerns regarding the Fellowship Program. The e-mail address is [onrncat@ncat.edu](mailto:onrncat@ncat.edu)

## 3.0 Measurements and Evaluation Process

The true measure of the success of the fellowship program will continue to be tied to the numbers of students who ultimately pursue and complete the Ph. D. degree in engineering and who return as faculty at the HBCUs. To date, sixty percent (60%) of the graduates have pursued careers at HBCUs. The List of Alumni document shows Fellowship Students from July 1, 2001 – December 31, 2008. (See EXHIBIT E)

## 4.0 ONR Fellow's Status

At the end of the last academic year (2007-2008) there were seven (7) fellows in the program. A breakout of the seven fellows includes six males and one female. All fellows are in their third year of the program. All fellows are in good academic standing. (See Table 1)

Name	Gender	Major	GPA	University
Clarence Wardell	M	Industrial & Systems	3.47/ 4.00	Georgia Tech
Roderick Jackson	M	Mechanical Engineering	3.85/ 4.00	Georgia Tech
Thomas Searles	M	Applied Physics	3.65/ 4.00	Rice University
Terrance Johnson	M	Mechanical Engineering	3.49/ 4.00	Penn State
Albert Chung	M	Chemical Engineering	3.85/ 4.00	University of CA, San Diego
Jonathan Madison	M	Materials Sci & Engineering	6.37/ 5.00	University of Michigan
Kyla McMullen	F	Electrical Eng & Comp Science	6.43/ 5.00	University of Michigan

At the end of the reporting period, three (3) fellows were removed from the program because their 36 months of eligibility had expired. The fellows are Jonathan Gaines (Virginia Polytechnic Institute and State University), Tariq Ahmid (Howard University) and Wakeel Idewu (Louisiana State University). Also, at the end of fall semester, four (4) additional fellows were removed from the program because their 36 months of eligibility had expired. The fellows were Willie Bowen (University of Michigan), Rodney Avcrett (Georgia Institute of Technology), Bobby Watkins (Georgia Institute of Technology) and Maliq Culbreath (North Carolina A & T State University).

**Note:** Dr. Jamal Wilson and Dr. Kwaku Eason completed all the Ph.D. requirements at Georgia Institute of Technology. Both received their Ph.D.s in Mechanical Engineering in August 2008. Dr. Wanda Gay completed all the Ph.D. requirements at Howard University and graduated in August 2008.

**“CONGRATULATIONS TO THE CLASS OF 2008”**

Dr. Jamal Wilson
Dr. Kwaku Eason
Dr. Wanda Gay

## 5.0 Summary: Area of Study, Research and Accomplishments

**Clarence Wardell**

**Georgia Institute of Technology**

**Area of Study:** Industrial & Systems Engineering Expected Graduation: May 2009

**Research:** Competition and Coordination among Humanitarian Relief Organizations

**E-mail:** [cwardell@gmail.com](mailto:cwardell@gmail.com)

**Clarence Wardell III** is a Ph.D. student in the School of Industrial and Systems Engineering at Georgia Tech, where he works in the Tennenbaum Institute for Enterprise Transformation. During his time at Tech, Clarence has worked in applying tools from Operations Research to problems in the public sphere, and in the area of revenue management and pricing, with the latter work stemming from an internship with IBM Research. More specifically, he is concerned with issues of coordination and collaboration among humanitarian relief organizations. His work attempts to understand how coordination or the lack thereof, effects optimal performance of the relief system, and subsequently seeks to define coordination mechanisms and incentives that could potentially drive the current system towards optimal efficiency. Clarence earned his BSE in Computer Engineering at the University of Michigan, during which time he conducted research at NASA, and worked for the Intel Corporation.

**Advisor:** Dr. William Rouse

[william.rouse@isye.gatech.edu](mailto:william.rouse@isye.gatech.edu)

**Roderick Jackson**

**Georgia Institute of Technology**

**Area of Study:** Mechanical Engineering

Expected Graduation: May 2009

**Research:** Carbon Nanotube Transparent Electrodes for Organic Phovoltaics and LEDs

**E-mail:** [gt2465a@mail.gatech.edu](mailto:gt2465a@mail.gatech.edu)

**Roderick Jackson** is a mechanical engineering Ph.D. student at the Georgia Institute of Technology. His research is on the development of new transparent conductive electrodes for organic electronics, with a particular focus on thin film networks of single wall carbon nanotubes. He is a current Georgia Institute of Technology President's

Fellow, Georgia Institute of Technology Facilitating Academic Careers in Engineering and Science Fellow, and Office of Naval Research/HBEC Future Faculty Fellow. Prior to his current position, he worked as a mechanical engineer for Delphi Corporation in Clinton, MS. He also holds a BSME and MSME from the Georgia Institute of Technology.

**Advisor:** Dr. Samuel Graham, Jr.

[sgraham@me.gatech.edu](mailto:sgraham@me.gatech.edu)

**Thomas Searles**

**Rice University**

**Area of Study:** Applied Physics

**Expected Graduation:** December 2010

**Research:** Optically Detected Resonance Spectroscopy of Excitons in Single Walled Nanotubes

**E-mail:** [gt0538b@prism.gatech.edu](mailto:gt0538b@prism.gatech.edu)

**Thomas A. Searles** is a graduate student in the Applied Physics Program in the Electrical & Computer Engineering Department at Rice University. As a member of the Kono Group, his thesis work titled "Optically Detected Resonance Spectroscopy of Carbon Nanotubes" is primarily focused on the magneto-optical properties of these unique quasi-1D nanostructures. By probing the exciton physics of carbon nanotubes, the aim is to experimentally determine the full internal energy structure, which will result in advancement of many optoelectronic applications. In completing his research, he has performed experiments at the National High Magnetic Field Laboratory (Tallahassee, FL), Los Alamos National Laboratory, UCSB Free Electron Laser Facility, National Institute of Materials Science (Tsukuba, JP), and Tohoku University (Sendai, JP). In the summer of 2008, Thomas interned with the Infrared Focal Plane Array Group in the Optical Sciences Division of NRL. His work there was vital to the research and development of the "bioelectronic nose." Thomas graduated Cum Laude from Morehouse College with a BS in Mathematics and a BS in Physics. He is a native of Albany, GA.

**Advisor:** Dr. Junichiro Kono

[kono@rice.edu](mailto:kono@rice.edu)

**Terrance Johnson**

**Pennsylvania State University**

**Area of Study:** Mechanical Engineering

**Expected Graduation:** August 2009

**Research:** Bistable Structures for Morphing Rotorblades

**E-mail:** [tej117@psu.edu](mailto:tej117@psu.edu)

**Terrence Johnson** is a native of New Orleans, Louisiana and, in May 2002, he received an Honors Bachelors of Science degree from the University of Texas at Arlington in Mechanical Engineering. Upon graduation, he enrolled at The Pennsylvania State University where he received the Master of Science degree in Mechanical Engineering in May 2005. He is currently pursuing the Doctorate of Philosophy degree from The Pennsylvania State University, and is expected to graduate in August 2009. Through his academic career, he has held intern and research positions at Wright Patterson Air Force Research Laboratory, Bettis Atomic Power Laboratory, and University of Wisconsin at Madison, Clemson University, and General Motors Truck Group. He is currently an ONR/HBCU Fellow and received the Penn State Top Teaching Assistant Award from the Department of Mechanical Engineering at Pennsylvania State University in April 2006.

**Advisor:** Dr. Mary Frecker

[mx36@psu.edu](mailto:mx36@psu.edu)

**Albert Chung**

**University of California, San Diego**

**Area of Study:** Chemical Engineering

**Expected Graduation:** August 2010

**Research:** The Molecular Mechanics of Immunoglobulin Gene Rearrangement

**E-mail:** [akchung@ucsd.edu](mailto:akchung@ucsd.edu)



**Albert Chung** was born in Taiwan but was raised in the United States. Growing up in Albany California it was always expected that he would attend UC Berkeley which he did. After receiving his BS in Chemical Engineering from UC Berkeley, Albert worked for several years as both a control system and a process engineer designing refinery and power plants. He is currently working towards a Ph.D. degree at UC San Diego. Even though, he is a Chemical Engineer, his area of research is actually a Bioengineering topic. Albert wants to cross pollinate his skills into different disciplines in order to make his skills set more unique, thus allowing him to view and approach engineering and research difficulties from a different perspective. As a result, he hopes his unique background will allow him to be the type educator that will help spark the minds of the next generation to achieve even greater heights.

**Advisor:** Dr. Richard Hertz

[herz@ucsd.edu](mailto:herz@ucsd.edu)

**Jonathan Madison**

**University of Michigan**

**Area of Study:** Materials Science and Engineering

**Expected Graduation:** May

2009

**Research:** 3D Reconstruction & Characterization of the Solid-Liquid Interface in Directionally Solidified Nickel-Based Superalloys

**E-mail:** [jonnymad@engin.umich.edu](mailto:jonnymad@engin.umich.edu)

**Jonathan D. Madison** is currently a Ph.D. Candidate in the Department of Materials Science and Engineering at the University of Michigan and originally hails from Wichita, KS. He obtained his bachelor's degree in Engineering Science in 2003 from Clark Atlanta University in Atlanta, GA. While at the University of Michigan he has not only been an ONR HBEC Future Faculty Fellow, but also a Rackham Merit Fellow, a 2-time Martin Luther King Jr. Spirit Award Winner and a National Society of Black Engineers – Graduate Student of the Year Golden Torch Honoree. Within the MSE Department, Jonathan is a graduate student research assistant for Professor Teresa M. Pollock. Jonathan has served on the executive board of the Society of Minority Engineers and Scientists – Graduate Students (SMES-G) for 2 years. Jonathan has been an active student recruiter through the College of Engineering's office of recruitment as well as a three-time student host for the College of Engineering's award winning recruitment program for under-represented students of color; IMPACT. Jonathan is also a member of The American Society of Mechanical Engineers (ASME), The Minerals, Metals and Materials Society (TMS), the National Society of Black Engineers (NSBE) as well as the distinguished Alpha Phi Alpha Fraternity, Incorporated-Ann Arbor Alumnae Chapter in which he currently serves at Chapter President. He currently volunteers as a tutor for a Saturday morning tutorial program emphasizing math, science and African-American history to students in grades K-12. Additionally, within the last year, Jonathan has also helped to establish and run a comprehensive mentoring program for young black males ages 12-17 that attend school in the Ann Arbor and Ypsilanti school districts.

**Advisor:** Dr. Teresa Pollock

[tresap@engin.umich.edu](mailto:tresap@engin.umich.edu)

**Kyla McMullen**

**University of Michigan**

**Area of Study:** Electrical and Computer Science

**Expected Graduation:** May 2010

**Research:** Relationship Learning Software: Design and Assessment

**E-mail:** [kyla@umich.edu](mailto:kyla@umich.edu)

**Kyla McMullen** is in the final phase of her Ph.D. program in Computer Science and Engineering at the University of Michigan. She has been investigating the acquisition and

support of cognitive spatial maps in immersive-reality systems through audio processing. This research matches well with ONR/DoD goals in the reduced manpower area. Tentatively, she will be collaborating with the Naval Submarine Medical Research Laboratory, which is interested in spatial audio in sonar applications; as security permits. Most recently, Kyla received notification from a Human-Computer Interaction conference that her two separate studies on concept acquisition and culturally conscious design frameworks were accepted for publication and presentation.

**Advisor:** Dr. Gregory Wakefield

[ghw@umich.edu](mailto:ghw@umich.edu)

**As a result of being a part of the ONR Future Engineering Faculty Fellowship Program, we will address some of the accomplishments of the earlier participants in the program from 2001 - 2008.**

**Christopher Geiger, Ph.D., Assistant Professor**

**Degree Granting Institution:** Purdue University

**E-Mail:** [geigercd@ncat.edu](mailto:geigercd@ncat.edu)

**Employment:** North Carolina A&T State University's Department of Industrial Engineering

**Major:** Industrial Engineering, December 2001

**Biography:** Christopher D. Geiger received his Bachelor of Science in Industrial Engineering in 1992 from North Carolina Agricultural and Technical State University in Greensboro, North Carolina. He received both his Master of Science and Doctor of Philosophy degrees in Industrial Engineering from Purdue University, West Lafayette, Indiana, in 1995 and 2001, respectively. An Assistant Professor in the Department of Industrial and Systems Engineering at North Carolina Agricultural and Technical State University since January 2002, Christopher's research interests include artificial intelligence applications in process planning and scheduling, (meta-) heuristic search procedures and rule discovery systems. His teaching experience and interests include production planning and control, heuristic search and meta-heuristics and applied simulation modeling and analysis. His work experience includes capacity analysis of manufacturing lines at Ford Motor Company in Connersville, Indiana and Delphi Automotive Systems, Delco Electronics Systems Division (formerly Delco Electronics Corporation) in Kokomo, Indiana. His industry experience also includes implementation, evaluation and improvement of inventory management policies at Intel Corporation in Chandler, Arizona.

**Rosalind Wynne, Boston University**

**Major:** Doctoral Candidate in Electrical and Computer Engineering (Expected Graduation: 2004)

**E-Mail:** [rwynne@bu.edu](mailto:rwynne@bu.edu)

**Advisor:** T.F. Morse, Ph.D.

**Research Summary:** High Powered Double Clad Ytterbium Doped Fiber Lasers at 980 nm and 920 nm

The goal of Rosalind's proposed Ph.D. research is to design, fabricate and characterize high power ytterbium ( $\text{Yb}^{+3}$ ) doped double-clad silica fiber laser that will lase at 980 nm. The selectivity characteristics of Bragg gratings will be exploited to obtain the desired lasing parameters.  $\text{Yb}^{+3}$  doped optical fiber have absorptions peaks at 915 nm, 980nm and 1060nm and have a tendency to lase around 1060nm rather than the desired 980nm wavelength. Designing an active optical fiber with a set of Bragg gratings tuned at 980nm at opposing ends of the fiber creates a laser cavity at 980nm resonance



wavelength. Additional tilted or long period gratings will be positioned along the fiber to suppress the gain at the undesired 1060nm wavelength. Thus the fiber is optimized to contribute to the lasing at the 980nm wavelength. The double clad fibers consist of a single mode fiber core surrounded by a multimode layer that is then surrounded by a lower refractive index material and are generally long. The structure of this fiber allows the pump light to couple into the active fiber efficiently. We hope to learn if the double clad fiber approach with Bragg gratings can produce more intense light at the 980nm wavelength. The Yb<sup>3+</sup> double clad silica fiber laser has the potential to serve as a high-powered fiber laser pump source at 980nm for the erbium doped fiber amplifier used in the telecommunication industry. We have developed three novel coherent combining schemes that may allow us to achieve high output powers. Military applications such as laser ranging and laser radar (LIDAR) may benefit from these high power laser schemes. This high-power fiber laser may also prove to be more robust and compact than existing YAG welding and cutting lasers and be used for laser welding and cutting in the materials and biomedical industries.

**Gregory Triplett**, Georgia Institute of Technology

**Major:** Doctoral Candidate in Electrical and Computer Engineering (Expected Graduation: 2004)

**E-Mail:** [gt8146a@prism.gatech.edu](mailto:gt8146a@prism.gatech.edu)

**Internet:** <http://users.ece.gatech.edu/~triplett>

**Advisor:** Gary May, Ph.D.

**Research Summary:** Control of Anion Exchange during Solid Source Molecular Beam Epitaxy for Improved Device Manufacturing and Performance

Interfaces play a critical role in the performance of advanced heterostructure electronics and photonics. Elimination of extrinsic, deleterious interface properties that result from anion exchange is key to the manufacturing of high performance heterostructure devices. As/Sb mixed devices will be produced by solid source molecular beam epitaxy (MBE). Neural networks will be used to develop process models based on Reflection High Energy Electron Diffraction (RHEED) signals and process conditions. These models shall illuminate the microscopic processes present during growth of As/Sb mixed heterostructures.

**Paula Johnson**, University of Florida

**Major:** Doctoral Candidate in Environmental Engineering (Expected Graduation: 2003)

**E-mail:** [pljohn@grovc.ufl.edu](mailto:pljohn@grovc.ufl.edu)

**Advisor:** W. Emmett Bolch, Jr., Ph.D., P.E. Committee Chairman and Professor

**Research Summary:** Uptake of Radionuclides and Heavy Metal Contamination. Paula Johnson is earning her doctorate in Environmental Engineering Sciences. Her research involves the effects of radionuclides and metals on plants. Her area of specialty is radioecology and radiological engineering with future research interests in aquatic and marine radioecology and the effects of ELF radiation. She has a B.S. and M.S. in Nuclear Engineering and Science; a M.S. in Materials Science with a concentration in glasses, ceramics, and amorphous materials; and a M.S. in Materials Engineering with a concentration in electronic and photonic materials. Ms. Johnson has a professional background in nuclear engineering, materials engineering and nuclear and electromagnetic radiation survivability/vulnerability.

**Felicia Nave**, University of Toledo

**Major:** Doctoral Candidate in Chemical Engineering (Expected Graduation: December 2002)

**Employment:** Prairie-View A&M University's Department of Chemical Engineering

**E-Mail:** [fnave@eng.utoledo.edu](mailto:fnave@eng.utoledo.edu)

**Research Summary:** The Impact of Mobil Phase Parameters on the Transport Properties of Metal Affinity Polyvinyl alcohol Membranes.

The overall objective of Felicia Nave's research is to synthesize and characterize poly vinyl alcohol hydrogels that have been functionalized with metal affinity ligands. These ligands provide a second highly selective mechanism of transport in hydrogel membranes and should extend the use of these materials to a wide range of bio-separations applications. Specifically, over the past year Felicia has made considerable progress in characterizing the protein sorption characteristics of these membranes. In addition, she constructed equipment to characterize the permeation properties of these affinity hydrogels.

**Erwin Gilmore**, Howard University

**Major:** Doctoral Candidate in Electrical Engineering (Expected Graduation: Fall 2002)

**E-Mail:** [erwin.gilmore@worldnet.att.net](mailto:erwin.gilmore@worldnet.att.net)

**Advisor:** Mohamed Chouikha, Ph.D.

**Research Summary:** A study of Joint Compression and Classification Algorithms for Applications to Medical Image Processing

**Michel Reece**, Morgan State University

**Major:** Doctoral Candidate in Electrical Engineering (Expected Graduation: 2003)

**E-Mail:** [Reece@eng.morgan.edu](mailto:Reece@eng.morgan.edu)

**Advisor:** Carl White, Ph.D., Associate Professor

**Research:** A Revolutionary High Efficiency Class F MMIC Amplifier at Ka-Band  
This proposed work is geared towards developing a revolutionary high efficiency class F MMIC amplifier design at Ka-Band. Achieving high efficiency in RF and microwave amplifiers is important for reducing the size and weight and increasing the output power, battery lifetime and reliability of mobile, wireless, and satellite communication systems. A novel technique that can be employed to realize high efficiency operation of power amplifiers at microwave frequencies is to employ a Class F amplifier configuration. In order to achieve the class F performance, the proposed final amplifier design will incorporate an output circuit that is tuned to pass the fundamental, short (suppress) the second (even) harmonics, and provide an open to the third (odd) harmonics. However, at frequencies in the Ka-Band, transistors are far from ideal. This proposed work will help to prove that artificial neural network models are capable of accurately modeling a transistor's characteristics at such frequencies and will also aid in decreasing the design cycle. A proposed design process incorporating the artificial neural network model will be discussed. Additionally, test (measured) and simulated results of a broadband amplifier design and simulation results of a C-Band Class F amplifier design utilizing Triquint PHEMTs is included to compare accuracy of the model and feasibility of study. Integration into CAD applications is discussed.

**Biography:** Education--Morgan State University, Doctor of Engineering, Electrical Engineering; The Pennsylvania State University, December 1996, Master of Science,



Electrical Engineering; Morgan State University, May 1995, Bachelor of Science, Electrical Engineering

**Employment:** Morgan State University, Summers 1999, 2000 & 2001, COMSARE Graduate Researcher. Assisted in the development of training modules for COMSARE Research Training Infrastructure. Presented a lecture series concerning microwave calibration and measurement using Agilent's Vector Network Analyzer. Designed, simulated and tested a broadband MMIC amplifier using .25um PHEMTs. Designed, simulated and sent out to fabrication a C-Band Class F MMIC amplifier. Developed an HPRoot PHEMT model for Boeing IR&D; Northrop Grumman, January 1997- August 1998, Entry Level Engineer. Designed and tuned coupled-line filters for LONGBOW program. Tested and extracted parameters for high frequency amplifiers (Celeritek). Completed verification tests on voltage regulators for T/R modules for the F22 program. Worked on FOPEN and AEROSTAT proposals. Applied Research Laboratory at Penn State, Summers 1996 & 1995--Graduate in Engineering Minority (GEM) Fellow Utilized a global positioning system (GPS). Installed and operated XR4-PC and SvecSix GPS receivers. Evaluated a conformal patch antenna in comparison to a GPS system. Conducted research on a noise-wave analysis technique for LNA's.; Hughes Aircraft Company (BOEING), Summers 1994, 1993 & 1992, B.S. Engineering Student Summer Intern, Tuned passive filters for research and development. Worked on component large and small signal modeling. Extracted s-parameters for semiconductor devices. Utilized PSPICE for worst case/stress analysis. Communicated with outside vendors (Mitsubishi, Texas Instruments, and NEC). Publications--"Application of the Noise-Wave Analysis Technique on a Balanced Low Noise Amplifier", Master's Thesis, The Pennsylvania State University, December 1996.

**Richard Pitts, Jr., Penn State University**

**Major:** Doctoral candidate in Industrial Engineering (Expected Graduation: 2004)

**E-mail:** [rap117@psu.edu](mailto:rap117@psu.edu)

**Advisor:** Richard A. Wysk, Ph.D., Professor

**Research:** Real-Time Scheduling in Computer Integrated Manufacturing Systems Research--Development of (1) algorithms for real-time scheduling issues in computer-integrated manufacturing (CIM) systems, (2) optimal computer-aided process planning (CAPP) systems with automatic NC/robot code generation, and (3) heuristics for minimizing printed circuit board (PCB) assembly time using multiple robots. All of the aforementioned areas of research lead to maximizing productivity and efficiency. Once optimized, the related costs due to the operation of these industrial systems are minimized and the methods employed will help to produce more agile manufacturing systems in the United States. My topic will probably be in (1) or (2) of the aforementioned areas of interest.

**Biography:** Richard Pitts is a husband to a lovely wife and a father of three energetic little ones. As a native of Baltimore, MD, he attended Morgan State University (MSU) and received a BS in Industrial Engineering in May 1991. After working briefly in industry, he returned to MSU to work as a Special Projects Engineer. In this role, he setup, operated and managed the Automation & Robotics Laboratory in the School of Engineering. Also, during this time Richard was introduced to teaching at the University level. In August 1992, he went on to Penn State University and received a MS in Industrial Engineering. Richard returned back to MSU for a second time, but this time it was to teach and advise IE undergraduate students and do research. In 1998 he was selected for the Who's Who Among America's Teachers Award. Two years later, Richard decided to return back to school to pursue a PhD in Industrial Engineering; thus,



allowing himself to grow as a tenure-track faculty member and not be restricted to just a “teaching” capacity.

**Ali P. Gordon**, Georgia Institute of Technology

**Major:** Doctoral Candidate in Mechanical Engineering

**Research Topic:** Numerical Simulation of Time-Dependent Fracture Along Bimetallic Interfaces

**Email:** [gt8034a@prism.gatech.edu](mailto:gt8034a@prism.gatech.edu)

**Internet:** <http://www.prism.gatech.edu/~gt8034a>

**Biography:** Mr. Gordon received a B.S. degree in mathematics from Morehouse College (1997). He obtained both his Bachelor's and Master's degrees in mechanical engineering from Georgia Tech (1997 and 2000, respectively). Mr. Gordon is currently a Ph.D. candidate in the G.W.W. School of Mechanical Engineering at Georgia Tech. As a Graduate Research Assistant involved with Georgia Tech's Mechanical Properties Research Laboratory (MPRL), he conducts elevated temperature, mechanical tests of engineered super alloys. These material property characterization tests are subsequently used for numerical simulations of fatigue and fracture. His dissertation research is focused on fracture along and near interfaces of materials with time-dependent properties.

**Sundiata Kwesi Jangha**, Georgia Institute of Technology

**Major:** Doctoral Candidate in Mechanical Engineering

**E-Mail:** [gt0538b@prism.gatech.edu](mailto:gt0538b@prism.gatech.edu)

**Biography:** Sundiata Jangha hails from Silver Spring, MD. He is an alumnus of North Carolina Agricultural and Technical State University in Greensboro, NC where he received a Bachelor of Science degree with high honors in mechanical engineering concentrated in design and manufacturing. He also received a Master of Science degree in mechanical engineering at Georgia Institute of Technology with a concentration in design and computer-aided engineering. He is currently enrolled in the Ph.D. program in mechanical engineering with a minor in management at Georgia Tech. His research is being conducted under the auspices of both the Systems Realization Laboratory (SRL) and the Rapid Prototyping and Manufacturing Institute (RPMI) within the GWW School of Mechanical Engineering. The focus of his research will be on integrating cutting edge design technologies into the mainstream mechanical design education. His research interests include; product design, enterprise design, design pedagogy, and engineering entrepreneurship.

**Cherita Corbett**, Georgia Institute of Technology

**Major:** Doctoral Candidate in Electrical Engineering

**Research:** Wireless Network Security

**E-Mail:** [gt0369c@prism.gatech.edu](mailto:gt0369c@prism.gatech.edu)

**Biography:** Cherita completed her BSEE at North Carolina Agricultural and Technical State University in 1998. She received her MSEE from Purdue University in 2000. After completing the masters program, she joined Sprint Communications as a NTAC Engineer II and was promptly promoted to Data Communication Engineer. In this role, she designed and analyzed data networks employing such technologies as ATM, Frame Relay, and IP. Seeking to do research and to have a greater contribution in data communications, Cherita returned to school in August of 2001 to pursue a Ph.D. in Electrical and Computer Engineering at Georgia Institute of Technology. Most recently, she has interned with IBM Watson Research Center where she designed a Linux reference implementation for testing and developing hardware acceleration engines.

**Research Summary:** Traditional approaches to security used in wireline networks are not applicable and are inadequate to wireless networks. Furthermore, wireless devices, like laptops and PDAs, have limited battery life, low computational processing power, and other restricted resources that impose new constraints. Due to the broadcast nature of wireless channels, eavesdropping is quickly identified as a concern. There exists robust cryptography capable of protecting the communication channel's confidentiality if we can overcome the issue of authenticating and cryptographic key sharing. Traditional wireline approaches, like Kerberos and public-key certificates, are unworkable because they rely on online connectivity to an authentication server and can be computationally expensive. Because mobile hosts have constrained resources and are intermittently connected to the network, new schemes are needed for authentication and key management. An equally important problem specific to wireless communications is that of individual location privacy. Anonymity, traceability, and traffic analysis are aspects of confidentiality that are of great importance to the users of wireless communications. Without proper techniques, wireless infrastructure can become a tool for surveillance, where malicious users can determine the time and place of transactions and correlate these transactions to each other to build a profile of legitimate users. Wireless communication is a rapidly evolving field and it is essential to overcome the challenges of wireless security to minimize the corresponding economical and social risks.

**Publications:** "A Mobility Enhancement for Switched Wireless Ethernet with Soft Handoff," R. Beyah, C. Turner, C. Corbett, J. A. Copeland, to appear on the Proceedings of IEEE MWCAS 2002.

**Frances Williams,** Georgia Institute of Technology

**Major:** Doctoral Candidate in Electrical Engineering (Expected Graduation: 2003)

**E-Mail:** [frances@ece.gatech.edu](mailto:frances@ece.gatech.edu)

**Advisor:** Gary May, Ph.D.

**Research Summary:** Monitoring and Control of Semiconductor Manufacturing Using Acoustic Techniques

In-situ monitoring of semiconductor manufacturing processes is vital for process control. However, this goal is currently restricted by the shortage of available sensors capable of performing in this manner. The goal of this project therefore is to investigate the use of acoustic signals for monitoring of plasma and electroplating processes and leak detection. Currently, most methods for process monitoring (such as optical emission or interferometric techniques) rely on "looking" at a process to monitor its status. What is being investigated here involves "listening" to the process either in addition to or instead of merely "looking."

## 6.0 Updated List of Deans of the Historically Black Engineering Colleges

### Dr. Eric J. Sheppard

Dean of Engineering and Technology  
Hampton University  
Hampton, VA 23668

### Dr. Eugene M. Deloatch

Dean, School of Engineering  
Morgan State University  
Baltimore, MD 21239

### Dr. Habib P. Mohamadian

Dean, School of Engineering  
Southern University  
Baton Rouge, LA 70813

### Dr. Lonnie Sharpe

Dean, School of Engineering  
Tennessee State University  
Nashville, TN 37209

### Dr. V. Trent Montgomery

Dean School of Engineering & Technology  
Alabama A&M  
Normal, AL 35762

### Dr. Sandra J. Deloatch

Dean, School of Engineering  
Norfolk State University  
Norfolk, VA 23504

### Dr. Ching-Jen Chen

Dean, College of Engineering  
Florida A&M University/Florida State University  
Tallahassee, FL 32316-2175

### Dr. Joseph Monroe

Dean, College of Engineering  
North Carolina A&T State University  
Greensboro, NC 27411

### Dr. Legand L. Burge, Jr.

Dean, School of Engineering  
Tuskegee University  
Tuskegee, AL 36088

### Dr. Kendall Harris

Dean, College of Engineering  
Prairie View A&M University  
Prairie View, TX 77446

### Dr. James H. Johnson

Dean, School of Engineering  
Howard University  
Washington, DC 20059

### Dr. Mark G. Hardy

Dean, CSET  
Jackson State University  
Jackson, MS 39217

### Dr. Pamela Leigh-Mack

Dean, College of Engineering  
Virginia State University  
Petersburg, VA 23806



**(EXHIBIT A)**

**ONR FELLOWSHIP APPLICATION PROGRAM**

# Historically Black Engineering Colleges

## Office of Naval Research

800 N. Quincy St., Arlington, VA 22217-5660



# FUTURE ENGINEERING FACULTY FELLOWSHIP PROGRAM

Administered by:



Web Site:

North Carolina A&T State University: <http://onrfellowship.ncat.edu>

**Deadline for entering the competition: March 3rd**

# TABLE OF CONTENTS

## PROGRAM OVERVIEW

Purpose	2
Objective	2
Eligibility	2

## OVERVIEW OF FELLOWSHIP PROCESS

Financial Appropriation	
Selection Criteria	3
Deadlines	3
Notification	3

## APPLICATION REQUIREMENTS

Components	4
Application Process	4
Mailing Information	4
Contact Information	4

## FELLOWSHIP APPLICATION

Application Form	5
Application Procedures Form	6
Certification Form	7
♦ Letters of Recommendation Requirements	
♦ Transcript Requirements	
Personal Statement Form	8
Personal Statement Form (continued)	9

## CHECKLIST FORM 10

## NOTES 11



## Purpose

There is a tremendous shortfall of black candidates for engineering faculty positions at Historically Black Colleges and Universities (HBCUs) in the United States. This problem is exacerbated by the fact that HBCUs educate a substantial proportion of the black graduates in engineering. In fact, HBCUs account for five of the top ten universities that graduate black engineering students (statistics from the National Science Foundation). The number of Ph.D. recipients in engineering who accept faculty positions at HBCUs is minimal at best. The Office of Naval Research's (ONR's) goal is to identify talented engineering baccalaureate recipients, and encourage them to pursue graduate studies leading to the Ph.D. and careers at HBCUs. The Future Engineering Faculty Fellowship Program is their mechanism for achieving this goal. The program provides financial aid to students pursuing engineering Ph.D. degrees who have certified their commitment to teach at a sponsoring Historically Black Engineering Colleges (HBECs).

## Objective

The ONR Program will increase the number of engineering students successfully pursuing the Ph.D. degree who are committed to teaching at a Historically Black Engineering College (HBEC) upon graduation. The fellowships are open to students who are U.S. citizens of any ethnicity or gender. The fellowship awards will be for up to three years with the expectation that awardees will graduate in that timeframe.

## Eligibility

- ◆ Applicants must be United States citizens.
- ◆ Applicants must be pursuing a Ph.D. degree in engineering as full-time students at a school accredited by.
- ◆ Applicants must have a cumulative grade point average of 3.3 on a 4.0 scale or a 4.3 on a 5.0 scale.
- ◆ Applicants must make an expressed commitment to teach at an HBEC upon graduation.
- ◆ Applicants may not accept simultaneous remuneration from another major fellowship, e.g., if an applicant is offered both an NSF and an ONR Fellowship, the applicant must choose between the two offers. Fellows must be eligible to accept both the tuition and the full stipend amount.

## Financial Appropriation

The ONR/HBCU Future Engineering Faculty Fellowship will pay the fellow's full tuition and required academic fees; it does not include room and board. ONR Fellowship stipends (12-month tenures) for new 2008-2009 fellows will be as follows:

STATUS	STIPEND	TUITION
Year One	\$33,600	Full Tuition (excluding Room and Board)
Year Two	\$34,800	Full Tuition (excluding Room and Board)
Year Three	\$36,000	Full Tuition (excluding Room and Board)

The Fellowship will also pay for health insurance coverage offered through the institution or through personal health/medical insurance **up to a total of \$1,300**. (Supporting documents are required for personal insurance.) Any insurance costs not covered by health insurance will be the responsibility of the fellow and can be paid using the stipend. The above amount will also be prorated monthly based on a 12-month academic year. If the fellow is not enrolled in approved coursework and/or research during the summer months, financial support will not be provided. There are no dependency allowances. **Requests for financial support for an additional year after the original 36 months require special approval. The requests must be supported by documentation from the Dean of the Graduate School and the students' advisors.**

## Selection Criteria

The Historically Black Engineering Colleges Committee (HBECC) will recommend ONR Ph.D. Fellows for selection annually. The HBECC is a subcommittee of the American Society of Engineering Education (ASEE). Evaluations will be based upon the following criteria:

- Academic Achievement
- Area of Study
- Personal Statement
- Letters of Recommendation

## Deadlines

Applicants will be notified of their acceptance after the HBECC has made its final selections. No early notifications are made to applicants. All decisions are final and irrevocable. Completed applications must be sent to the address above postmarked by the deadline below in order to be considered.

<b>Applications Must Be Complete and Postmarked by:</b>	<b>March 3rd</b>
<b>HBECC Evaluation of Applications Completed by:</b>	<b>April 21st</b>
<b>Recipients Notified In Writing by:</b>	<b>April 28th</b>

## Application Components

**Pages 5, 6, 7, 8 and 9** are to be removed, completed, and returned to the ONR/HBEC Fellowship Program Manager. These pages are required components of the application and must be included in order to have your application processed.

## Fellowship Process

The following are the Fellowship Application package and instructions that must be completed in order to be considered for the ONR/HBEC Future Engineering Faculty Fellowship Program:

1. Fellowship Application Requirements.
2. Certification Statement
3. Personal Statement (two pages)
4. Resume
5. Two Letters of Recommendation (At least one letter of recommendation should be from a Dean of an HBEC if possible)
6. Official Transcript

**Mail the Fellowship Application Package to this address:**

ONR/HBEC Future Engineering Faculty Fellowship Program  
c/o Lando R. Little, Jr., ONR Fellowship, Program Manager  
North Carolina A&T State University  
College of Engineering  
1601 East Market Street  
Greensboro, North Carolina 27411

## Contact Information

If you have questions or require additional assistance please contact:

Dr. Joseph Monroe, Principal Investigator  
North Carolina A&T State University  
Dean, College of Engineering  
Room 654 McNair Hall  
Telephone: (336) 334-7589 ext. 110  
E-mail: [monroe@ncat.edu](mailto:monroe@ncat.edu)

Mr. Lando Little, Program Manager  
North Carolina A&T State University  
College of Engineering  
1601 East Market Street  
Telephone: (336) 334-7995  
E-mail: [lriddle@ncat.edu](mailto:lriddle@ncat.edu)

Fax: (336) 334-7540  
Website: <http://onrfellowship.ncat.edu>



# APPLICATION

## ONR/HBEC Future Engineering Faculty Fellowship Program

(Please complete the **entire** application and check **all** boxes where required.)

Date: \_\_\_\_\_ Postmark Date: **March 3rd**

Last Name: \_\_\_\_\_ First Name: \_\_\_\_\_ Middle: \_\_\_\_\_

Social Security Number: \_\_\_\_\_ Age: \_\_\_\_\_ Date of Birth: \_\_\_\_\_  
(mm/dd/yyyy)

Gender: Male ☐ Female ☐ Are you a U.S. Citizen? ☐ Yes ☐ No

Current Mailing Address: \_\_\_\_\_  
(Street)  
\_\_\_\_\_  
(City) (State) (Zip)

**Race:**  
☐ African-American  
☐ Caucasian-American  
☐ Hispanic-American  
☐ Native-American  
☐ Asian-American  
☐ Other \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

Telephone: (\_\_\_\_) \_\_\_\_\_ Cellular Telephone: (\_\_\_\_) \_\_\_\_\_

Have you previously applied for this fellowship? ☐ Yes ☐ No

Are you currently receiving any other federally funded fellowship? Yes ☐ No ☐

Degree Granting Institution: \_\_\_\_\_  
(Full name of University)

Location of Institution: \_\_\_\_\_  
(Street address) (City) (State) (Zip)

Department: \_\_\_\_\_ Name of Degree Program: \_\_\_\_\_

Location of Department: \_\_\_\_\_  
(Street address) (City) (State) (Zip)

Current G.P.A.: \_\_\_\_\_ Expected Degree: \_\_\_\_\_ (Ph.D., D.Sc. etc.) Date Proposed for Graduation: \_\_\_\_\_

Date Proposed for Qualifying Exams: \_\_\_\_\_

Advisor's Name: \_\_\_\_\_ Address: \_\_\_\_\_

Advisor's E-Mail Address: \_\_\_\_\_ Advisor's Telephone: (\_\_\_\_) \_\_\_\_\_

Financial Aid Officer: \_\_\_\_\_ Financial Aid Officer's Telephone: (\_\_\_\_) \_\_\_\_\_

Mailing Address: \_\_\_\_\_ City: \_\_\_\_\_ State/Zip: \_\_\_\_\_

## Application Procedures

Review of candidates for ONR/HBEC Future Engineering Faculty Fellowships is coordinated by the Program Manager. The Historically Black Engineering Colleges Committee (HBECC) reviews all applications at a regularly scheduled committee meeting. The HBECC selects students who show the strongest promise of success in the program and who have goals that are consistent with the program objectives.

IT IS THE RESPONSIBILITY OF THE APPLICANT TO FOLLOW UP WITH ALL INSTITUTIONS AND PERSONS REGARDING TIMELY SUBMISSION OF ALL OF THE APPLICATION FORMS, TRANSCRIPTS AND RECOMMENDATION LETTERS. IF ANY PORTION IS OMITTED THE APPLICATION WILL NOT BE PROCESSED. **NO EXCEPTIONS OR EXTENSIONS WILL BE GIVEN.**

### Application Requirements

As an applicant, I understand that the following requirements must be met before I will be considered:

1. I must be a United States citizen.
2. I must have a cumulative grade point average of 3.3 on a 4.0 scale or a 4.3 on a 5.0 scale.
3. I must be attending an accredited college or university as full-time student.
4. I cannot be receiving any other federally-funded fellowship during my tenure as an ONR Future Engineering Faculty Fellow

### Fellowship Renewal Requirements

If chosen as an ONR Future Faculty Fellow, I understand that I must comply with the following renewal requirements:

1. Make progress consistent with meeting the graduation date indicated on my application
2. Maintain at minimum a cumulative grade point average of 3.0 on a 4.0 scale or a 4.0 on a 5.0 scale.
3. Enroll for full-time courses or dissertation hours.
4. Provide an **annual** Advisor Progress Report, which includes a recommendation for continuation.
5. Do not receive any other federally-funded fellowship during my tenure as an ONR Fellow.
6. Letter committing recipient to becoming a faculty member at one of the Historically Black Engineering Colleges for compensation and benefits to be mutually agreed upon at graduation.  
(After first year of funding only)
7. Fellowships are non-transferable.

**I HAVE READ THE ABOVE FELLOWSHIP REQUIREMENTS AND I AGREE TO ADHERE TO THE CONDITIONS SET FORTH HEREUNTO. I UNDERSTAND AND AGREE THAT ANY DOCUMENTS I SUBMIT OR DIRECT SUBMISSION THEREOF MAY BE PLACED IN MY RECORD WHICH IS HELD BY THE ONR/HBEC FUTURE FACULTY FELLOWSHIP PROGRAM MANAGER. THE PROGRAM MANAGER AND THE HBECC WILL USE THIS INFORMATION TO DETERMINE MY ONGOING STATUS IN THE PROGRAM.**

Applicant's Signature \_\_\_\_\_ Date \_\_\_\_\_

## Personal Statement

This two-page, typed statement is one of the most important aspects of this application and is equivalent to an interview. Please use the forms provided for you on **pages 8 and 9**. Remember, your statements are being addressed to the Historically Black Engineering Colleges Committee. Substitution of personal statements and resumes intended for other programs will not be accepted. In your essay develop responses to the following questions:

- What is the major reason you are pursuing a terminal degree in engineering?
- What do you consider to be your most outstanding contribution to date, i.e. academic, personal, or community? Explain why you selected this contribution.
- What unique skills and expertise would you bring to a Historically Black Engineering College (HBEC) as result of your academic program and your understanding of the mission of HBECs?
- What is your area(s) of research interest?
- If you are awarded this fellowship, what assurance will you give that you will indeed finish the degree?

## Letters of Recommendation

Two letters of recommendation are required. One should address your academic performance and should be written by a university or college faculty advisor. The second should be written by a Dean of a Historically Black Engineering College (HBEC), if possible. The letters must be sent in sealed envelopes with the application and be dated this year. They should be addressed to the Historically Black Engineering Colleges Committee and entitled "Academic," "Personal," or "Dean's Recommendation." Letters of recommendation intended for other programs will not be accepted.

1. We suggest the following points be addressed in the academic letter:  
Academic achievements, proficiency relative to program peers, oral and written communications skills, research skills, and determination to pursue the PhD.
2. We suggest two following points be addressed in the Dean's letter:  
Prospective contributions to an HBEC engineering faculty, (i.e., students, leadership) and prospective research contributions to the engineering community.

## Transcripts

Official original transcripts of recent college work must accompany this application. It is the responsibility of the applicant to follow up with all institutions regarding submission of requested material.

## CERTIFICATION

**I ATTEST THAT THE INFORMATION CONTAINED HERE IN IS, TO THE BEST OF MY KNOWLEDGE, COMPLETE AND ACCURATE. I UNDERSTAND THAT FALSIFICATION OF INFORMATION IS GROUNDS FOR DENIAL OF THE FELLOWSHIP. I FURTHER CERTIFY THAT I AM ENROLLED AS A FULL-TIME ENGINEERING TERMINAL DEGREE CANDIDATE.**

**Signature** \_\_\_\_\_ **Date** \_\_\_\_\_



**Name:** \_\_\_\_\_  
                                     **Last**                                    **First**                                    **Middle**

8

Name: \_\_\_\_\_

### Middle

# CHECKLIST

## REQUIRED APPLICATION MATERIALS

### IMPORTANT

A COMPLETE FELLOWSHIP APPLICATION PACKAGE SHOULD CONTAIN THE FOLLOWING ITEMS:

- ☐ Completed and typed **Fellowship Application**
- ☐ Signed and dated **Application Procedures Form**
- ☐ Signed and dated **Certification**
- ☐ **Resume**
- ☐ Attached **Personal Statement**
- ☐ **Two (2) Letters of Recommendation**
- ☐ Attached official original **Transcripts (undergraduate and graduate)**
- ☐ Meet postmark date of **March 3rd**

Please prepare the Fellowship Application Package in the above order and mail to this address:

**ONR/HBEC Future Engineering Faculty Fellowship Program  
c/o Lando R. Little, Jr., ONR Fellowship, Program Manager  
North Carolina A&T State University  
College of Engineering  
Greensboro, North Carolina 27411**



## NOTES

**(EXHIBIT B)**

**ONR FUTURE FACULTY FELLOWSHIP BROCHURE**

## GENERAL INFORMATION

This fellowship program is designed to develop qualified engineering faculty and encourage them to work at Historically Black Colleges and Universities (HBCUs) with engineering programs. Each year, candidates who have agreed to join the engineering faculty of an HBCU after receiving their degrees are competitively selected for study and research support leading to doctoral degrees in engineering. Disciplines include the following:

- Aerospace Engineering
- Electrical and Computer Engineering
- Mechanical Engineering
- Manufacturing Systems Engineering
- Civil Engineering
- Ocean Engineering
- Chemical Engineering
- Industrial Engineering
- Environmental Engineering

*The deadline for entering the competition is March 3rd. Applicants will be notified prior to May 1st.*



UNITED STATES OFFICE OF  
NAVAL RESEARCH



## Historically Black Engineering Colleges



## Future Engineering Faculty Fellowship Program

This Fellowship Program is administered by North Carolina Agricultural and Technical State University, in cooperation with the Office of Naval Research. This program is committed to equity in its programs and selection practices. U.S. citizens from all ethnic backgrounds are encouraged to apply for this fellowship.

ONR Point of Contact Information  
Mr. Lando R. Little, Jr., Program Manager  
North Carolina A&T State University  
1601 East Market Street  
Greensboro, North Carolina 27411  
Phone: (336) 334-7995  
Fax: (336) 256-2240  
email: [onrncat@ncat.edu](mailto:onrncat@ncat.edu)



## ABOUT THE FELLOWSHIP

### STUDENT SPOTLIGHT:

The Future Engineering Faculty Fellowship was established in 1992 and is funded by the Office of Naval



Research. It was designed to directly impact the number of students in the Ph.D. pipeline who are interested in teaching at Historically Black

Engineering Colleges (HBECS). The goal is to even more strategically enhance the number of engineering students successfully pursuing the Ph.D. degree who have an expressed commitment upon graduation to teach at an HBEC. The fellowships are open to students who are U.S. citizens of any ethnicity or gender. The fellowship awards will be for up to three years with the expectation that awardees will graduate in that timeframe. Since its inception, the Office of Naval Research, through the administration of North Carolina A&T State University, has awarded over 50 fellowships to Ph.D. candidates. The Future Engineering Faculty Fellowship Program represents the Office of Naval Research's commitment to address the tremendous shortfall of engineering faculty candidates for HBECS in the United States.

## ELIGIBILITY:

- Fellows must be U.S. citizens.
- Fellows must be pursuing an accredited Ph.D. degree in engineering as full-time students.
- Fellows must have a cumulative grade point average of 3.3, on a 4.0 scale or 4.3 on a 5.0 scale.
- Fellows must have an expressed commitment to teach at an HBEC upon graduation.
- Fellows are required to participate in research at Navy laboratories during the summer.

## HOW DO I APPLY?

Visit our website to apply online (our preferred method) or download all required forms with the application and adhere to the deadline. Our website is:

<http://onrfellowship.ncat.edu>

## SPONSORED HBECS:

Hampton University  
Howard University  
North Carolina A&T State University  
Florida A&M University  
Tuskegee University  
Prairie-View University  
Southern University  
Morgan State University  
Tennessee State University

## FINANCIAL AWARDS:

The ONR-HBEC Future Engineering Faculty Fellowship Award will not exceed **36 academic months (or three years)**. The fellowship award will pay the fellow's full tuition and required fees (not to include room and board). In addition to tuition and fees, the stipend component will be **\$33,600, \$34,800 and \$36,000** for years 1, 2, and 3, respectively. The Fellowship will pay for health insurance coverage offered through the institution, up to a total value of **\$1,300**. Any excess insurance costs will be the responsibility of the fellow and can be paid using the stipend.

## SELECTION CRITERIA:

Fellows will be recommended for selection annually by the Historically Black Engineering Colleges Committee (HECC), which is a subcommittee of the American Society for Engineering Education (ASEE). Evaluations will be based upon the following information:

- Academic Achievement
- Area of Study
- Personal Statement
- Recommendation Letters

UNITED STATES OFFICE OF NAVAL RESEARCH  
HBEC FUTURE ENGINEERING FACULTY FELLOWSHIP PROGRAM



**(EXHIBIT C)**

**ONR NEW WEB SITE NAVIGATION SUMMARY**



## **ONR-HBEC Phase One Navigation and Page Summary**

Presented To:

Dr. Anthony Junior, ONR Program Manager, Education Programs  
Dr. Mitzi Bond, Assistant Vice Chancellor for Research Administration  
Dr. Joseph Monroe, Dean, College of Engineering  
Dr. N. Radhakrishnan (Radha), Vice Chancellor, Division of Research & Economic Development





## ONR-HBEC PHASE ONE NAVIGATION AND PAGE SUMMARY

---

<http://yourbetterweb.com/onr>

### Overview:

---

#### ONR-HBEC Home

*The Home page* displays your main navigation. The navigation is using Java Script technology which allows for fly-out navigation. Both the main navigation and the sub navigation have a rollover effect.

*The Home Page* also features an easy-to-use Get Started section. This section helps a user begin the registration process with three easy steps Learn – Apply – Submit. Learn will take the user to the About ONR-HBEC page, Apply will take the user to the Register page explaining registration requirements and Submit will take the user to the online application.

*The Home Page* also lists the fields of study. This will give prospective fellows instant information about the program at a glance. A program fellow will also be featured on the home page.

*The Home Page* will have footer with links to the following: Home, Partners, and Register, copyright with WebBuilder Studios credit.

#### Flash Element

This Flash element gives the Web site a Web 2/0 feel. We wanted to give the site a high-tech look and feel. This element features the fields of studies with crisp images reflecting each field.

#### About ONR-HBEC

When clicking on this page the user will get details and a description and summary of the program. This page also can serve as a welcome to potential and future fellows.

#### Sub Navigation

Fields of Study

Financial Appropriations

Renewal/Selection



## **Our Fellows**

The ONR has some impressive fellows. This page will spotlight each fellow with a picture and complete biography.

### **Sub Navigation**

[Our Alumni](#)

[Fellow Resumes](#)

## **Register**

Users need to know what the registration requirements are. When clicking on this page they will get a full explanation of the process. We will link the online application and the PDF download.

### **Sub Navigation**

[Online Application](#)

[Application PDF](#)

## **Progress Report**

This report will keep users up to date on what is going on with the ONR Fellowship. Current data and information will featured in this section periodically.

## **Partners**

### **Sub Navigation**

[ONR Home](#)

[ONR Navy Lab](#)

[NCA&T](#)

[Black Engineering](#)

**HBEC's**

All of the HBEC's will list on this page with pictures of corresponding dean. There will also be hyperlinks to each individual school; however when clicking on that link the user will not be taken off the ONR site. A user will remain on the site at all times.

**Contact ONR-HBEC**

The contact page will feature all the official contact information for the program; address, contact phone numbers etc. There will also be a request information form on the page. This form will be delivered via email to a designated staff member. We will also feature Mr. Lando Little, Dr. Joseph Monroe and Dr. Anthony Junior on this page with picture and title.





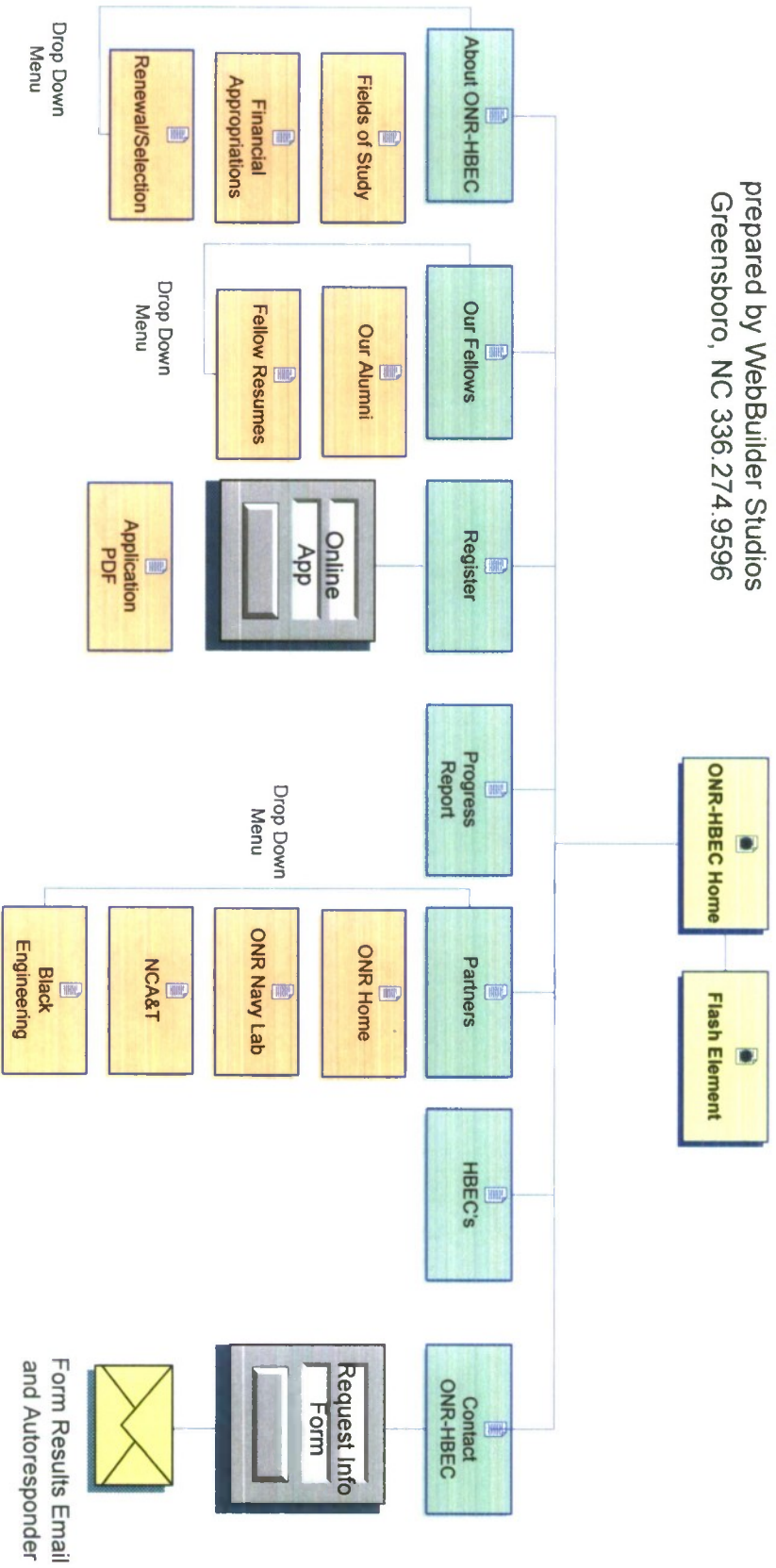
**Web Builder Studios**

*'Building a better Web one customer at a time...'*

914-B N. Elm St. Greensboro NC 27401 Phone: 336.274.9596 Fax: 336.274.9676

Conceptual Website Design  
**ONR-HBEC**

prepared by WebBuilder Studios  
Greensboro, NC 336.274.9596



[www.YourBetterWeb.com](http://www.YourBetterWeb.com)

24-7 Online Customer Support: <http://support.WebBuilderStudios.com>



[ABOUT ONR-HBEC](#) ▶

[OUR FELLOWS](#) ▶

[REGISTER](#) ▶

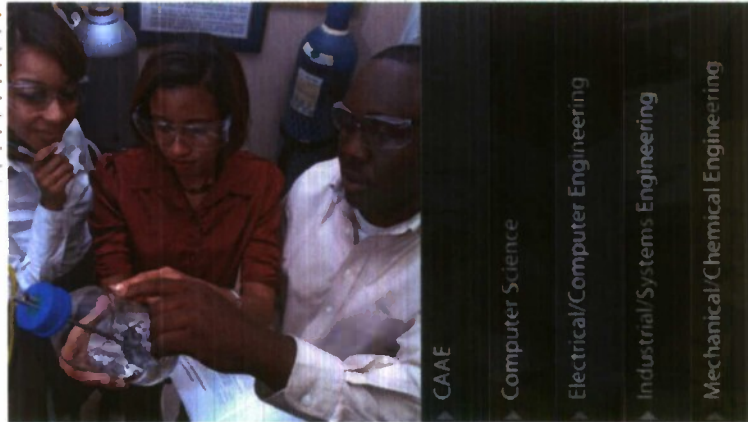
[PROGRESS REPORT](#) ▶

[PARTNERS](#) ▶

[HBEC'S](#) ▶

[CONTACT ONR-HBEC](#) ▶

[ONR-HBEC HOME](#) ▶



Applicants must be pursuing an **accredited PH.D degree** as a full-time student in one of the following engineering fields:

- ▶ Aerospace
- ▶ Electrical/Computer
- ▶ Environmental
- ▶ Manufacturing Systems
- ▶ Mechanical
- ▶ Bio-environmental
- ▶ Industrial Systems
- ▶ Civil
- ▶ Chemical
- ▶ Ocean

#### Jonathan D. Madison

is currently a Ph.D. Candidate in the Department of Materials Science and Engineering at the University of Michigan and originally hails from Wichita, KS. He obtained his bachelors degree in Engineering Science in 2003 from Clark Atlanta University in Atlanta, GA.

While at the University of Michigan he has not only been an ONR HBEC Future Faculty Fellow, but also a Rackham Merit Fellow, a 2-time Martin Luther King Jr. Spirit Award Winner and a National Society of Black Engineers – Graduate Student of the Year Golden Torch Honoree...[Read More >](#)

[Home](#) || [Partners](#) || [Register](#) || [Contact](#)

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ABOUT ONR-HBEC >

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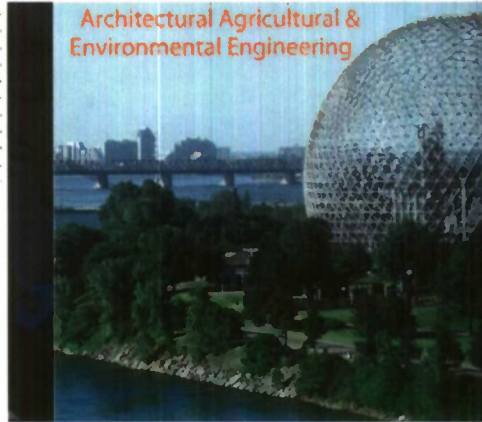
PARTNERS >

HBEC'S >

CONTACT ONR-HBEC >

ONR-HBEC HOME >

## Architectural Agricultural & Environmental Engineering



Computer Science

Electrical/Computer Engineering

Industrial/Systems Engineering

Mechanical/Chemical Engineering



Applicants must be pursuing an **accredited PH.D degree** as a full-time student in one of the following engineering fields:

- > Aerospace
- > Electrical/Computer
- > Environmental
- > Manufacturing Systems
- > Mechanical
- > Bio-environmental
- > Industrial Systems
- > Civil
- > Chemical
- > Ocean

### Jonathan D. Madison

is currently a Ph.D. Candidate in the Department of Materials Science and Engineering at the University of Michigan and originally hails from Wichita, KS. He obtained his bachelors degree in Engineering Science in 2003 from Clark Atlanta University in Atlanta, GA.

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## HISTORICALLY BLACK ENGINEERING COLLEGES

2008-2009

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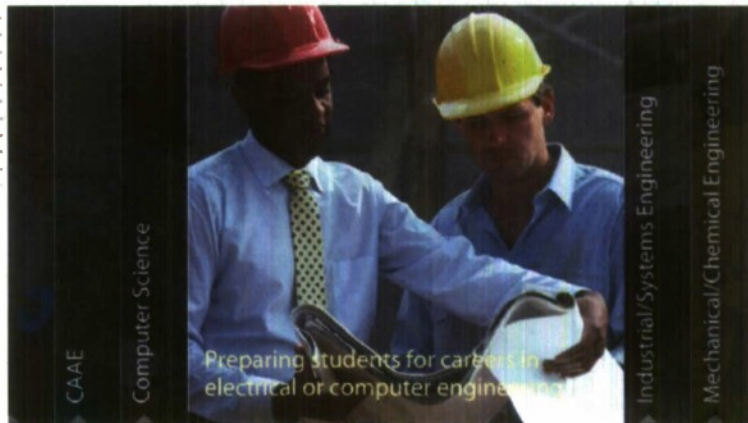
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2008-2009

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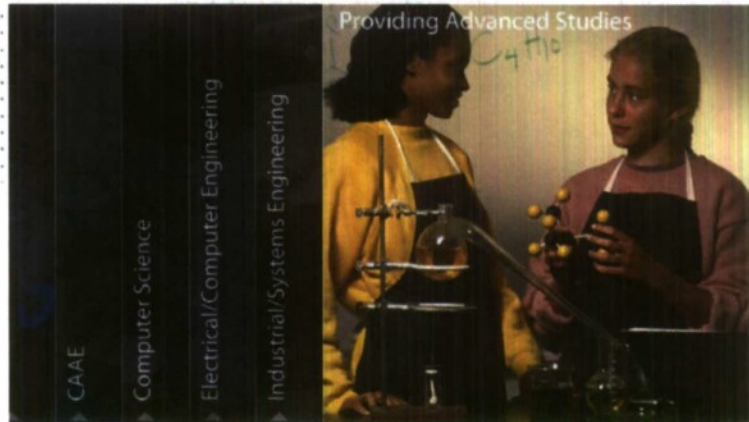
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**(EXHIBIT D)**

**ONR FLYER AND INSERT**

# **HISTORICALLY BLACK ENGINEERING COLLEGES**



**FUTURE ENGINEERING  
FACULTY FELLOWSHIP  
2008-2009**



# FUTURE ENGINEERING FACULTY

## HISTORICALLY BLACK ENGINEERING COLLEGES

### Program Overview

The Future Engineering Faculty Fellowship program was established in 1992 and is funded by the Office of Naval Research. It is designed to directly impact the number of students in the Ph.D. pipeline who are interested in teaching at Historically Black Engineering Colleges (HBECS). The goal is to, even more strategically, enhance the numbers of engineering students successfully pursuing the Ph.D. degree who have an expressed commitment to, upon graduation, teach at an HBEC.

The fellowships are open to

students who are U.S. Citizens of any ethnicity or gender. The fellowship awards will be for up to three years with the expectation that awardees will graduate in that timeframe. Since its inception, the Office of Naval Research, through the administration of North Carolina A&T State University, has awarded over 50 fellowships to Ph.D. candidates.

The Future Engineering Faculty Fellowship Program represents the Office of Naval Research's commitment to address the tremendous

shortfall of engineering faculty candidates for HBECS in the United States.

Fellowships are awarded for doctoral studies in engineering fields supported by ONR and the sponsoring HBEC Universities. These fields are:

- Aerospace Engineering
- Electrical Engineering
- Computer Engineering
- Mechanical Engineering
- Industrial Engineering
- Chemical Engineering
- Manufacturing Engineering
- Environmental Engineering
- Civil Engineering
- Ocean Engineering

### Selection Criteria

The Historically Black Engineering Colleges Committee (HBECC) will recommend ONR Ph.D. Fellows for selection annually, which is a subcommittee of the American Society of Engineering Education (ASEE). Evaluations will be based on the following criteria:

- Academic Achievement
- Area of Study
- Personal Statement
- Recommendation Letters



### Funding Component:

Stipend: Year 1 \$33,600  
Year 2 \$34,800  
Year 3 \$36,000

Tuition: Full Tuition & Fees

Health Insurance: up to \$1,300

### Notes:

Annual Deadline for Applications	<b>March 3rd</b>
Annual Award Notifications	<b>April 28th</b>
Annual Funding Begins	<b>Fall</b>

### Contact Information:

Dr. Joseph Monroe, Program Investigator  
Mr. Lando R. Little, Jr., Program Manager  
North Carolina A&T State University  
Telephone: 336.334.7995  
Fax: 336.256.2240  
WEBSITE: <http://onrfellowship.ncat.edu>



## HBEC FUTURE ENGINEERING FACULTY

<p><b>Clarence Wardell</b> Georgia Institute of Technology Area: Industrial &amp; Systems Engineering Expected Graduation: May 2009 Research: Competition and Coordination among Humanitarian Relief Organizations E-mail: cwardell@gmail.com</p>	<p><b>Terrance Johnson</b> Pennsylvania State University Area: Mechanical Engineering Expected Graduation: August 2009 Research: Bistable Structures for Morphing Rotor-blades E-mail: tej117@psu.edu</p>
<p><b>Roderick Jackson</b> Georgia Institute of Technology Area: Mechanical Engineering Expected Graduation: May 2009 Research: Carbon Nanotube Transparent Electrodes for Organic Photovoltaics and LEDs E-mail: gt2465a@mail.gatech.edu</p>	<p><b>Jonathan Madison</b> University of Michigan Area: Materials Science And Engineering Expected Graduation: May 2009 Research: 3D Reconstruction &amp; Characterization of the Solid-Liquid Interface in Directionally Solidified Nickel-Based Superalloys E-mail: jonnymad@engin.umich.edu</p>
<p><b>Thomas Searles</b> Rice University Area: Applied Physics Expected Graduation: Dec 2010 Research: Optically Detected Resonance Spectroscopy of Excitons in Single Walled Nanotubes E-mail: gt0538b@prism.gatech.edu</p>	<p><b>Albert Chung</b> University of California, San Diego Area: Chemical Engineering Expected Graduation: August 2010 Research: The Molecular Mechanics of Immunoglobulin Gene Rearrangement E-mail: akchung@ucsd.edu</p>
<p><b>Kyla McMullen</b> University of Michigan Area: Electrical And Computer Science Expected Graduation: May 2010 Research: Relationship Learning Software: Design and Assessment E-mail: kyla@umich.edu</p>	<p>To Learn More About the Fellows Visit Our Website: <a href="http://onrfellowship.ncat.edu">http://onrfellowship.ncat.edu</a></p>
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**(EXHIBIT E)**

**ONR LIST OF CURRENT AND ALUMNI STUDENTS**

## 7.0 ONR / HBECU Future Engineer Faculty Alumni

### FELLOW STUDENTS FOR (JULY 1, 2001 - DECEMBER 31, 2008)

PURDUE UNIVERSITY	CHRISTOPHER GEIGER
BOSTON UNIVERSITY	ROSALINE WYNNE
GEORGIA TECH	GREGORY TRIPLET
UNIVERSITY OF FLORIDA	PAULA JOHNSON
UNIVERSITY OF TOLEDO	FELECIA NAVE
WEST VIRGINIA	WILLIAM HAMLET
MORGAN STATE	TROY GRAHAM
HOWARD UNIVERSITY	ERWIN GILMORE
MORGAN STATE	MICHEL REECE
PENN STATE	RICHARD PITT
GEORGIA TECH	ALI PAGE GORDON
GEORGIA TECH	SUNDIATA K. JANGHA
GEORGIA TECH	CHERITA L. CORBETT
GEORGIA TECH	FRANCES WILLIAMS
NCSU	FRANKLIN I. BROWN
FSU	CHARMANE V. CALDWELL
GEORGIA TECH	MONIQUE HITE
GEORGIA TECH	BOBBY WATKINS
GEORGIA TECH	KWAKU EASON
HOWARD UNIVERSITY	WANDA GAY
NCSU	SHAUN TANNER
NCSU	RAMSEY HOURANI
LOUISIANA STATE	WAKEEL IDEWU
MICHIGAN	WILLIE BOWEN
GEORGIA TECH	RODNEY AVERETT
GEORGIA TECH	CLEON DAVIS
HOWARD UNIVERSITY	TARIQ AHMIDO
VIRGINIA TECH	JONATHAN GAINES
CALIFORNIA, SAN DIEGO	ALBERT CHUNG
GEORGIA TECH	JAMAL WILSON
RICE UNIVERSITY	THOMAS SEARLES
MICHIGAN	KYLA McMULLEN
MICHIGAN	JONATHAN MADISON
PENN STATE	TERRANCE JOHNSON
GEORGIA TECH	RODERICK JACKSON
GEORGIA TECH	CLARENCE WADDELL
NC A&T STATE UNIVERSITY	JIMMY HUFF
NC A&T STATE UNIVERSITY	MALIQ CULBREATH